

LISTING OF CLAIMS

(1)-(6) (canceled)

(7) (currently amended) A speech recognition method for causing a speech recognition device configured to include a computer to perform speech recognition[[;]] the method causing the speech recognition device to execute steps of:

storing in a storage area a feature quantity acquired from a current speech signal for each frame;

reading from said storing portion a speech signal acquired immediately prior to a current speech signal to be processed at the current time point to generate echo speech model data;

processing a speech model stored in a storing portion using an echo adaptation model generation portion for generating echo speech model data from a speech signal acquired

immediately prior to the current speech signal to be processed at the current time point;

generating a speech model affected by intra-frame echo influence using acoustic model data and an intra-frame characteristic;

adding ~~and using~~ the echo speech model data to the speech model affected by intra-frame echo influence to generate an adapted acoustic speech model data and store it in a storage area; and

processing said feature quantity, said adapted acoustic model data, and language model data stored in a storing portion to generate a speech recognition result of the current speech signal.

(8) (currently amended) The speech recognition method according to claim 7[[;]] wherein the step of generating said adapted acoustic model data further comprises steps of:

~~an adding portion calculating the sum of said read speech signal and an intra-frame transfer characteristic value; and~~

a model data area transforming portion reading ~~to read~~ said sum calculated by said adding portion; and

transforming ~~transform~~ cepstrum acoustic model data into linear spectrum acoustic model data.

(9) (previously presented) The speech recognition method according to claim 8, further comprising a step of:

causing an adding portion to read and add said linear spectrum acoustic model data and said echo speech model data

to generate a maximum likelihood echo prediction coefficient.

(10) (currently amended) The speech recognition method according to claim 9[[]] wherein the step of transformation into said linear spectrum acoustic model data comprises a step of causing said adding portion to add the cepstrum acoustic model data of said acoustic model and cepstrum acoustic model data of an intra-frame transfer characteristic to generate the [[a]] speech model affected by intra-frame echo influence.

(11) (currently amended) The speech recognition method ~~device~~ according to claim 10[[]] wherein the step of generating said echo prediction coefficient comprises a step of determining the echo prediction coefficient so that the maximum likelihood is given to at least one phoneme for which the sum value of the linear spectrum echo model data of said speech model affected by intra-frame echo influence

and said echo speech model data, which has been generated by said adding portion and stored.

(12) (currently amended) A computer-readable program embodied in a computer readable storage medium for causing a computer to execute the speech recognition method comprising the steps of:

storing in a storage area a feature quantity acquired from a current speech signal for each frame;

reading from said storing portion a speech signal acquired immediately prior to a current speech signal to be processed at the current time point to generate echo speech model data;

processing a speech model stored in a storing portion using an echo adaptation model generation portion for generating echo speech model data from a speech signal acquired

immediately prior to the current speech signal to be

processed at the current time point and using the echo speech model data to generate adapted acoustic speech model data and store it in a storage area; and

processing said feature quantity, said adapted acoustic model data, and language model data stored in a storing portion to generate a speech recognition result of the current speech signal.

(13) (canceled)

(14) (new) The speech recognition method according to claim 11 further comprising the step of:

using the determined echo prediction coefficient and read speech signal to acquire an absolute value of an echo as the echo speech model data.

(15) (new) The speech recognition method according to claim

7 wherein said storing comprises steps of:

transforming a received current speech signal into a digital signal; and

storing the transformed signal with amplitude associated with at time frame.

(16) (new) The speech recognition method according to claim 9 wherein said echo prediction coefficient is calculated for at least one of a particular signal receiving device, a level of recognition efficiency, a level of recognition speed, and each state of a Hidden Markov Model.